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FARM FENCING

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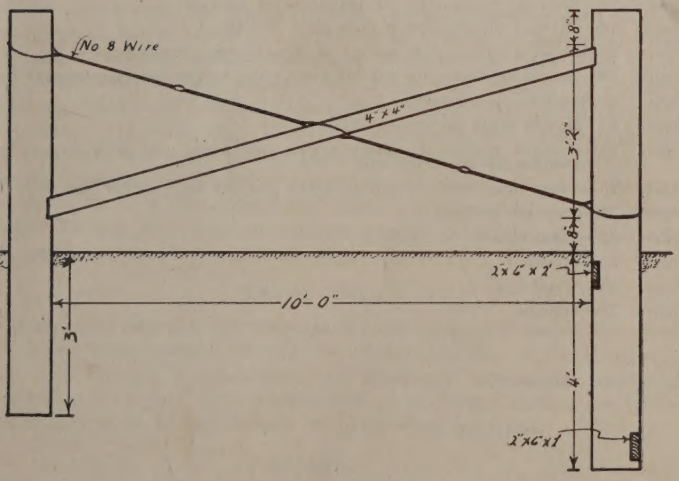

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FARM FENCING

A. C. Kimrey, W. W. Shay, Geo. Evans and B. F. Kaupp, Animal Industry Division

Realizing that a great amount of farm fencing is poorly constructed, this ...n has been prepared with a view to calling attention to some of the most ...on mistakes made in fence building and methods of their correction. It ...een the aim also to compile and arrange in accessible form such information ...y be of benefit to the farmer in selecting posts, wire, gates and so forth.

POSTS

There are three kinds of posts in use for farm fencing purposes, namely, ... iron and concrete. Wood posts are generally used in timbered sections, ...o their cheapness as compared with iron or concrete. The iron and concrete ... have been used rather extensively in those sections of the United States ... timber is scarce and consequently high priced. Each kind of post has a ..., each kind has advantages as well as disadvantages. It behooves the man ...contemplates building fence to consider the post question rather seriously ...completely, for as a chain can be no stronger than its weakest link, just so ...ce can hardly be stronger than its weakest post.

WOOD POSTS

Wood is the most widely used material for fence posts in this country. The ... majority of wood posts in use are untreated and in most cases no effort ...been made to prolong the life of the post. In many cases not even the bark ...been removed, but is left on and only falls off after decay has set in. This ...very natural result of an abundant supply of timber and cheap labor.

The woods used for post purposes are of two main classes. One class is ...paratively durable and will last from eight to twenty years without preserva- ... treatment. The other class of woods are comparatively non-durable and ...last less than eight years, in fact many of them will not last more than two ...ree years without some kind of preservative treatment. Some of the most ...ble woods we have are cypress, red cedar, locust, mulberry, osage orange, ...e oak, chestnut, etc. Some of the less durable woods the pine, gum, ash, ...oak, poplar and many other such woods.

Time of Cutting

It is generally believed that posts made from timber cut during the winter ... last longer than those cut during the summer months. However, there is ... little real evidence to substantiate this belief, and various tests conducted ...different places in the United States seem to show that summer cut timber ... last as long as winter cut, if both are given equal treatment.

Seasoning

Posts that are to be planted without any preservative treatment will not ... any longer if seasoned than they will if planted before seasoning. In case the ...s are to be treated with creosote or tar, or any other preservative, it is ... necessary that they be well seasoned. The bark should always be removed ...n posts are cut.

Shape of Posts

There are various ideas prevalent concerning the lasting qualities of rou split and sawed posts, some claiming that one and some another will last long Experiments show that the lasting qualities of posts made of the same kind wood depends upon the size of the post and not on the shape, whether rou split or sawed, except that when sawed posts are sawed across the grain th will rot more quickly.

Treating to Prevent Decay

The decay of wood is due to the action of certain low forms of plant called fungi. These consist for the most part of fine thread-like filaments, lectively called mycelium, which penetrate into the wood. The fungi live u certain substances found in the wood. As these substances are dissolved wood structure is broken down and the state reached known as rotten.

The mycelium usually grows out toward the surface and forms masses kn as fruiting bodies, from which spores spread and lodge in other pieces of w and thus set up decay in them. The various forms of "toad stools," "bracket "punks," and "dog ears" found on trees and dead wood are examples of th fruiting bodies and their presence usually means that decay has made consider headway in that particular piece of wood.

A damp condition of the wood is most favorable to decay. Wood may either so wet or so dry that fungi cannot live in it and consequently decay can begin. Wood under water has been known to last for hundreds of years. damp condition of the soil that the fence post comes in contact with is favorable to decay.

Method of Preservative Treatment

A number of methods of preservative treatment of fence posts have l resorted to in the past, such as charring, painting and creosoting.

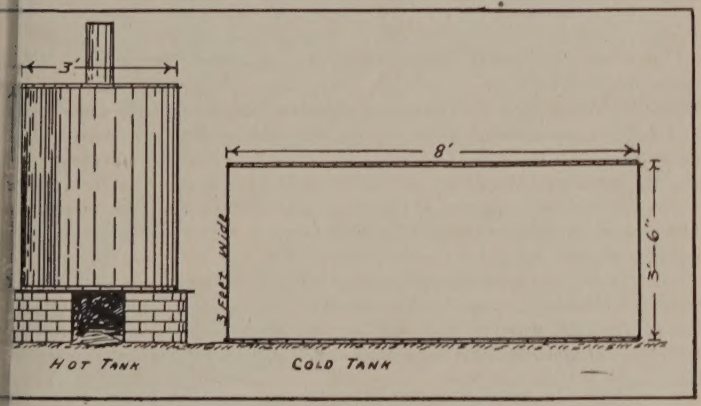
Charring has proven unsatisfactory due to the checks left between the c coal pieces on the post, which allow fungi to enter and set up decay.

Painting is fairly effective for the part of a post which does not com contact with the ground, but not effective for the part in the ground which n protecting most. It is rather expensive and difficult to apply to the rough sur of the average farm fence post.

Creosoting

The only practical method of preservative treatment of fence posts on farm is creosoting. This is best done by what is known as the open tank met Two vats should be provided, one in which the creosote can be heated and other in which the posts can be placed in cold creosote. In case only the e of the posts are to be treated, a metal oil barrel with one end removed make a satisfactory vat. Place the vat over a brick or stone furnace and arra the smoke stack so that sparks will not fall into the creosote, as it is inflam Suitable bars should be placed under the bottom to make sure that the weigh the posts will not break through the bottom of vat. If the entire post i be treated, a tank of suitable size must be constructed to contain the entire l lying down instead of standing upright as when only the ends are treated. creosote in this tank should be heated nearly to the boiling point and the p allowed to remain in this hot solution for about an hour. The main object

ating is not to penetrate the post with creosote, for this does not happen, great extent, but to force air and water out of the wood. Then place ated posts in the tank containing the cold creosote. The heated wood and ntained in it contract upon cooling and creosote is forced into the pores wood by atmospheric pressure. Do not fill tanks more than one-third creosote. A suitable arrangement for this manner of treatment is shown ure 1.



IGURE 1—SUITABLE TANKS FOR CREOSOTING POSTS BY THE OPEN TANK METHOD

USE FINE SCREEN WIRE OVER SMOKE STACK TO PREVENT SPARKS

It is generally believed to be the most practical practice to heat in the ote the end of the post that is to be put in the ground and then have the tank ining the cold creosote large enough to hold the post lying down. This es the ground end to take more creosote and the top will usually take enough sure it to last as long as the ground end.

Condition of Posts to be Treated

The posts to be treated should be thoroughly seasoned. It is best to w them to season slowly through a period of at least three months. This seasoning will serve to prevent unnecessary cracking. The bark should horoughly removed, being careful to remove the thin layer of bark, as this of the bark prevents the creosote from properly penetrating the wood.

Soft porous woods, such as pine, take creosote better than the harder woods. lasting quality of non-durable woods can at least be doubled and in some es much more, by a thorough treatment of creosote.

Kind of Creosote

There are at least three kinds of creosote on the market, and by kind is meant efly the source from which it comes. They are coal-tar creosote, wood-tar creo-e, and water-gas-tar creosote. Most of the experimental work that has been e with these creosotes as post preservatives has been done with coal-tar creosote. pparently has given the best results.

CONCRETE POSTS

Mr. J. J. Crumley, of the Ohio Experiment Station, made an examinat of some 10,000 concrete and steel fence posts, which had been in use along Big Four and Pennsylvania Railroad for a length of time sufficient to sho considerable percentage of failure.

The types of concrete posts examined were: Round with a shallow groov the side next to the fence; round with a flat side next to the fence; triangu with a composition core for receiving staples; T-shaped and rectangular.

Types of reinforcement used were: Narrow flat pieces of steel; broad rugated steel; wire, either single or two or more pieces twisted together; sm square rods and gas pipe.

Mr. Crumley found that the most important consideration in connection w the type of reinforcement made use of was not the degree of added streng but its tendency to cause disintegration. In this connection he says: "T thin flat strips and the broad corrugated steel have proven complete failures

It appears that the use of these was abandoned, and six twisted No. wires, used in the same mixture of concrete, made a post which stood up while others failed.

Mr. Crumley's investigations showed conclusively that reinforcing mate should be covered by at least one-fourth inch of concrete. Concrete posts are their best as anchor posts where they are necessarily rather massive.

Suitable forms, together with complete directions for making concrete po may be had of manufacturers.

STEEL POSTS

Steel posts are in common use in the central and western states, especia where wood suitable for posts is less plentiful than in the South.

The various types include: Right angle or L-shape; T-shape; tubular U-shaped.

It is believed that the quality of metal of which they are made has m more to do with their lasting quality than either the paint or other material wh covers them.

Mr. Crumley, as a result of his investigation, places the durability of various types of steel posts at from fifteen to twenty years.

WIRE FENCING

It is rather difficult, if not impossible, to definitely decide on any style of woven wire fence to be advocated as a general farm fence, due to varied uses which fence is put to on different farms.

The quality of wire, galvanizing, height, style of weave, size of mesh, of wires, and cost, are the main things to be considered in selecting a fe for general farm use.

Quality of Wire

The quality of the wire in a fence is one of the first things which sho be considered. A fence may be ever so well constructed, and if the quality of wire is poor, the fence will prove a disappointment, and, in the long run, be expensive, although the first cost may not have been so great. The wire sho

le of steel and so galvanized that, when a piece of it is taken and sub- to either of the following tests, it should stand as indicated in the test.

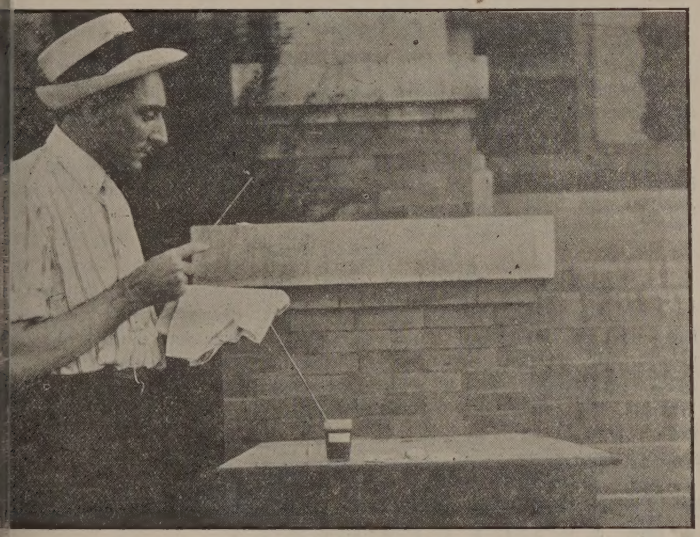


FIGURE 2—TESTING QUALITY OF GALVANIZING

est No. 1. The sample should be dipped into a saturated solution of Sul- of Copper (Blue Vitrol) at 60° Fahr.—and retained there one minute; it hen be withdrawn and wiped dry. This process should be repeated until the , **when wiped dry,** retaines a reddish deposit of metallic copper. A good of galvanized wire should stand three of these one-minute immersions showing copper coloring, or else the test shows conclusively that the izing is not satisfactory.

opper Sulphate, as noted in the above formula for testing, is commonly as Blue Vitrol. Sixty degrees Fahrenheit has reference to the temperature water used—about one pint—and should be about a medium temperature.

est No. 2. The second test is known as the Acid Test, which consists of im- g the wire in Hyhrochloric Acid three separate periods of one minute each. end of the third immersion there should still be chemical action, as indicated bbling.

Height

here seems to be some difference of opinion as to the height of fence for l farm use. It should be of sufficiently fine mesh at the bottom to turn small nd at the same time high enough to successfully keep cattle. The extremely ire is not advisable, neither is the extremely high. The complete fence never be lower than 50 inches.

ne of the best fences for general farm use is made by using 40-inch woven vith not less than 9 line wires, together with two or more strands of four

point barb wire, usually known as hog wire, the barbs being three inches
The first strand of barb should be placed four inches above the top o
woven wire. The second strand of barb should be placed six inches abov
first.

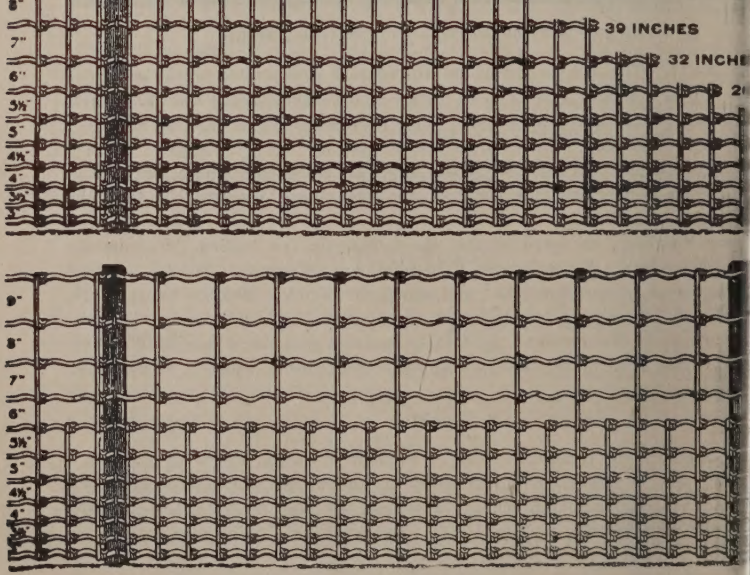
Style of Weave and Size of Mesh

Wire should be woven with the stay wires perpendicular to the line
thus forming a rectangular shaped mesh. The stay wires should be wr
around the line wires, thus forming a stronger and more durable fence t
the stay wires are welded to the line wires.

The bottom mesh should not be larger than 3 by 6 inches, the line wir
ing 3 inches apart and the stay wires 6 inches apart. The space betwee
succeeding line wire should gradually widen.

Size of Wires

In any woven wire fence to be put to general farm use, the top and b
wires should not be smaller than No. 9 gauge. Since these two wires c
great part of the tension, it is necessary to have them very much larger th
others. The intervening line wires should not be smaller than No. 11
Either of the two styles of woven wire fence shown in figures No. 3
together with two strands of barbed wire at the top, will make a satisf
general farm fence.



Figures 3 and 4—Styles of Wire Fencing

'ABLE SHOWS THAT THE NEARER A FIELD APPROACHES A SQUARE IN SHAPE, THE LESS FENCE IS REQUIRED PER ACRE TO FENCE IT

ncing	No. Rods required to fence Triangular field	No. Rods required to fence Rectangular field.	No. Rods required per acre for square field.	No. Rods required per acrde for Triangular shaped field.	No. Rods required per acre for Triangular field.	Cost of wire to enclose a square, including two strands barb. (1920 Prices.)	Cost of wire to enclose a rectangle, including two strands barb. (1920 Prices.)	Cost per acre in a square.	Cost per acre in a rectangle.
4	40 x 40 x 56 136.5	120 20 x 80	22.8	27.3	24.0	$ 85.50	$ 90.00	$17.10	$18.00
0	50 x 64 x 81 195.2	200 40 x 100	16.0	19.5	20.0	$120.00	$150.00	$12.00	$15.00
4	80 x 100 x 128 308.0	280	10.1	12.3	11.2	$190.50	$210.00	$ 7.62	$ 8.40
0	100 x 128 x 162 390.0	400	8.0	9.7	10.0	$240.00	$290.00	$ 6.00	$ 7.25

nd one-fourth pounds of staples is sufficient for 10 rods of 40-inch fence, including two strands of barbed wire.

GENERAL FARM GATES

The first thing to consider in the construction of gates is the style, type kind of gate needed.

IRON GATES

If iron gates are to be used, select gates that have a strong frame, brace adjustable diagonal brace rod to keep the gate from sagging. Two kinds ates are made; light and heavy, and narrow and wide. It is advisable to t gates strong enough for general farm purposes.

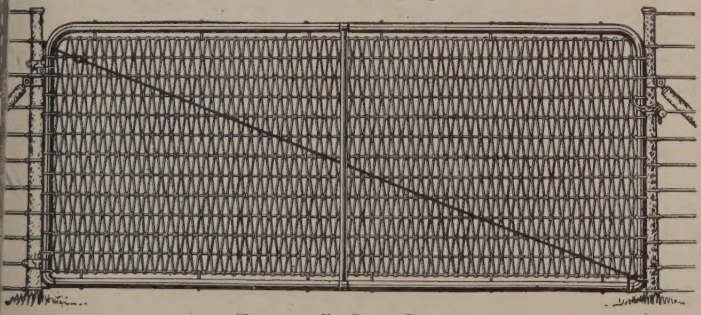


FIGURE 5—IRON GATE

WOODEN GATES

Wooden gates are very satisfactory if made right and will last a long ie if painted or creosoted.

Dressed lumber should be used if possible to get it, as it lasts much lo than rough lumber.

Select lumber as light as possible that will last a long time, but st enough to stand considerable pressure and rough usage. The lumber sh be one inch thick and four to six inches wide. Use as many bars as nece to keep small stock from going through the gate, and high enough to larger stock from going over it. It is not necessary to make the gate higher than the fence. It is better to make the gate two inches lower so when the gate is hung it will be even with the top of the fence.

It is a good policy wherever hogs are kept to bury a small pole in ground deep enough to permit wagons to go over it without bumping, and sh enough to permit the gate to swing easily and not drag the ground.

The gate should fit about two inches off the ground. Always hang gate on the same side of the posts that the wire is on unless the of the land will not permit.

Gate Posts

Never use less than 10 inch posts to hang wooden gates to. Anchor brace them well. The thicker the post, the better the service.

Set the posts plumb, and let the lower hook extend one-half inch farthe than the top one. When the gate is hung this will throw it towards the and if the gate is opened not quite half way it should close itself when t loose. If the latch is fixed like the one shown in Fig. 6 it will fasten i If used very much by horseback riders, this gate will be found very conve

In making a wooden gate for general farm purposes it will requi sufficient number of bars to make the gate as high and as long as ne one six-inch plank for batten at back; two planks four inches wide for ba three feet from the front; two six-inch planks for braces at front of gate; two extra six-inch planks to strengthen the top and bottom bars by dou from back of gate to brace and from brace to middle batten, as shov Figure 6.

Gate Latch

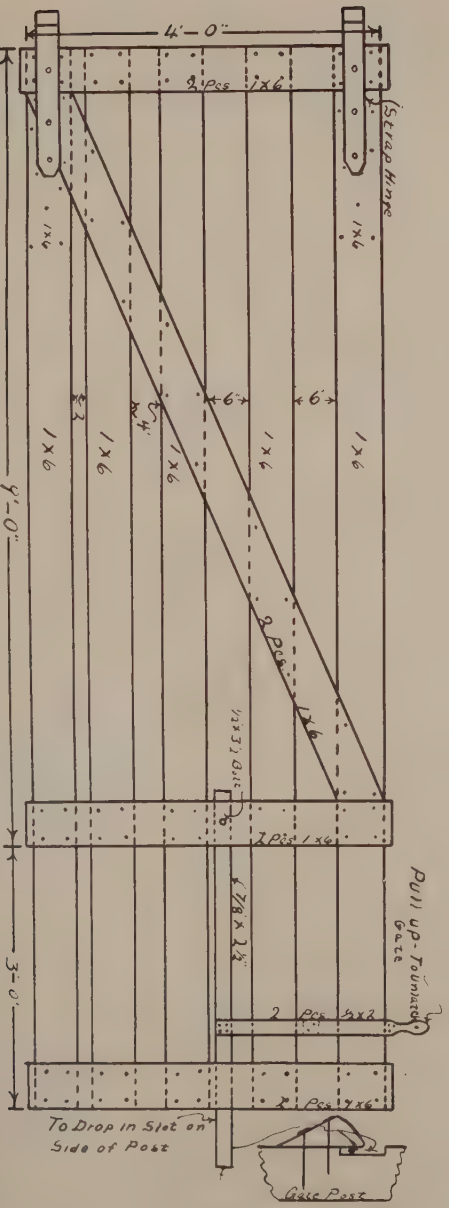
The latch is made of $\frac{7}{8}$" x $2\frac{1}{2}$" and is fastened by a three-fourths wooden peg in between the middle batten, as shown on gate in Figu A hole should be bored through the latch larger than the ones in the ba Large hook and strap eye hinges should be used; the large hook to g the post, with threads on the part that goes in the post, and the strap pa the gate with three to four bolt holes in it. This should be put on with large enough to fill the holes, and washers put on the other end of bolt to it from going in the wood too far. The hook should be put in the po first boring a hole with brace and bit $\frac{1}{8}$-inch less than the size of the bolt. will make the hook turn hard in getting it in, but will give better satisf than if the hole is made too large and does not hold the hook in.

Construction of Gate

1. Square and saw all the bars required to make the gate.

2. Square and cut all the battens the required length to make the ga high as needed.

3. La the plank for bars on a level surface or on saw benches, pu a saw bench under where each batten is to go. Regulate the bars the de



General Farm Gate

FIGURE 6—GATE SHOWING CONVENIENT LATCH

assistance of H. B. Kransy, Farm Forester, is acknowledged in preparing section on posts.

distance apart, leaving a space between the center bars six inches for latch work in. Then nail on the batten with eight penny nails, using four or to each bar. These will be long enough to go through the batten and bar, clench on the inside. Use one nail to each bar until they are all in pro place. Then square the gate and nail solid.

4. Put on one brace while working on that side, using four nails to e plank as shown in Figure 6, and clench these on inside the gate.

5. Turn the gate over to clench all nails, put on other battens and br and nail with ten penny nails.

6. Put on the extra pieces between the brace and battens on the the hinges will be on.

7. Put on the hinges as near to the end of gate as possible, so as to the eye extend as far across the post as possible in order that the hook not have to be too near the edge.

8. Bore a ¾-inch hole in the center battern 1¾ inches from where bar on the batten as shown in Fig. 6. This will put the latch one-half inch f the bar.

9. Place a block of wood one-half inch thick and as wide as the ba under the latch between front batten.

10. Bore a ⅞-inch hole in end of latch six inches from the end. R the other end on lower side so that it will not bind on the slide on gate Make a wooden peg ¾ inch in diameter to put in the hole in battens and latch, saw off each end flush with the battens after the peg is driven in tight. not put latch on until after the gate is hung.

11. When the gate is made and ready to hang, put a little oil or g on the hooks before hanging.

12. Fit in the latch and mark off the place on the post for it t in by first marking with a pencil under the latch when down as far will go, then mark on the top of the latch. Lift up the latch as high as it go and mark again. Open the gate and mark off the width of the slot fo latch to fit in. Make the two first marks ¾ inch lower than where the fits, which will allow the gate to drop some.

13. Cut out the marks and nail on the slide. Grease it a little so make it slip easily.

14. Nail a 2" x 4" on post for stop far enough back so that the gate fasten, but not too far to allow too much play.

For fuller details of construction of a general farm wooden gate t feet long, four feet eight inches high, made out of six-inch plank for one six-inch batten and two four-inch battens, refer to Figure 6.

The gate shown in Fig. 7 is made altogether out of six-inch plank a thirteen feet long, but this gate, having no hinges, extends beyond the posts six inches on each end, which makes the gate posts twelve feet apa shown in Fig. 7. This gate will be found satisfactory where it will not be much and it is necessary to have a gate, but is not very satisfactory it has to be used frequently.

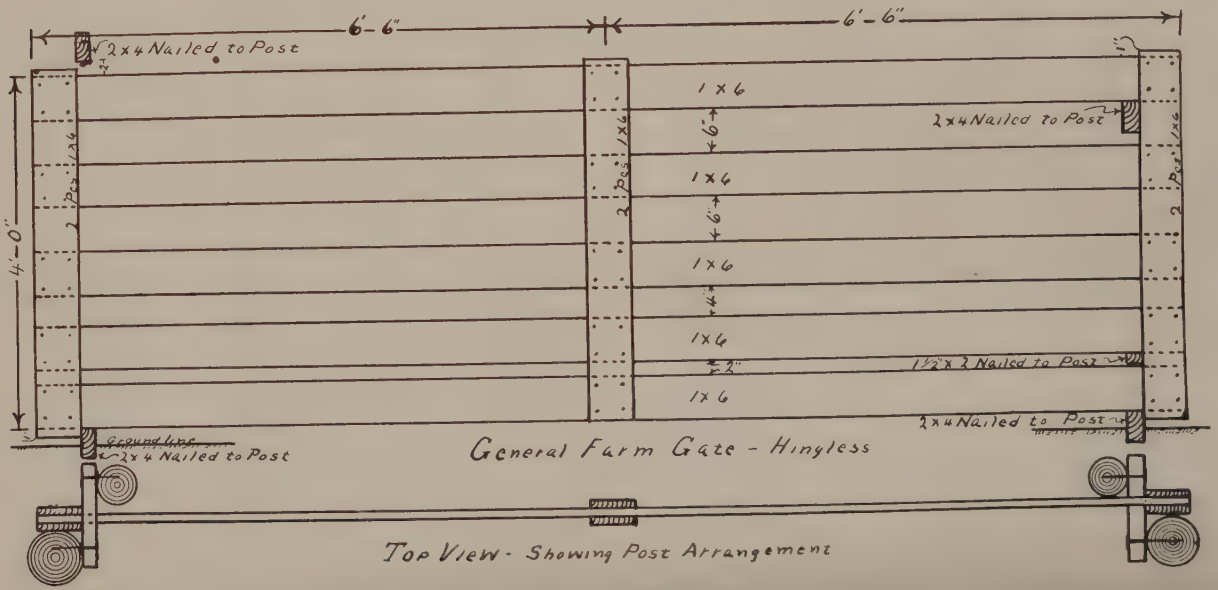


FIGURE 7—SLIDING GATE

Another way to make an opening in a fence where it is not necessar use it much is by the use of bars. In 12 to 14 foot openings, it is nece to use 2" x 4" or 2" x 6" for the bars. For an eight foot gate one-inch will do. Nail some blocks ¼ inch thicker than the bars on the post, and enough apart to hold the bars the desired distance apart. Nail them soli each post, then nail one 1" x 6" on each post on top of them and slide bars in their place.

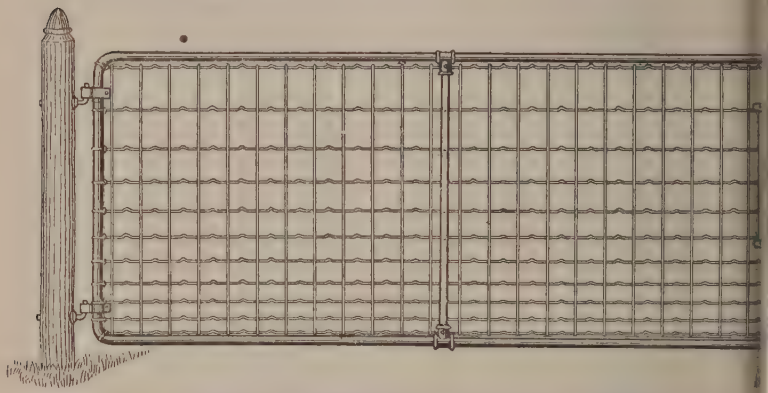


Figure 8—Iron Gate With Double Fastner

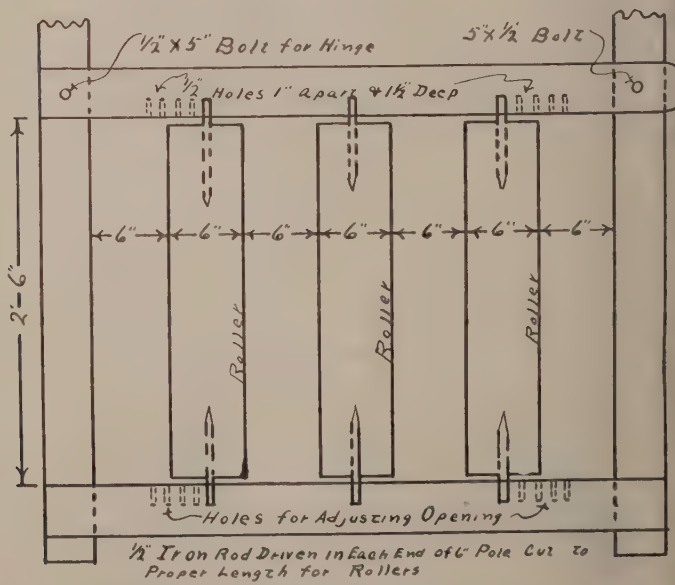


Figure 9—Roller Creep for Pigs and Other Small Stock

CREEPS

eeps for young stock, especially for pigs and lambs, are necessary to allow mals a place to go where they can be fed extra feed and the old ones way from them. It is not necessary to have them for cattle or horses. eeps should be made large enough to take care of the number of animals in the creep and enlarged as required. Figure 9 shows method of creep out of rollers, which will not rub the sides of animals when through, and can be adjusted as required.

gure 10 shows a creep made out of 1" x 3" material nailed solid, 7 inches which will allow lambs and pigs to pass through until old enough to By making creeps with the openings perpendicular the back of the animal will not be injured. This should always be looked after. Never reep made with the opening horizontal. As the lower plank will have to low enough to keep the old stock out, it will make it too low for the animals to get under, which will have a tendency to weaken their Three sides of the creep can be made solid and have openings only on e. The creep can be made either in the barn or out in the pasture.

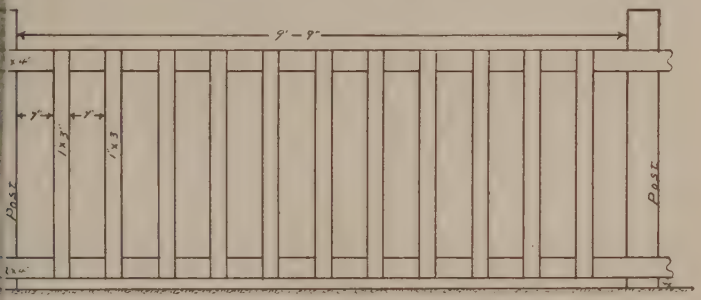


FIGURE 10—SLOT CREEP FOR PIGS AND LAMBS

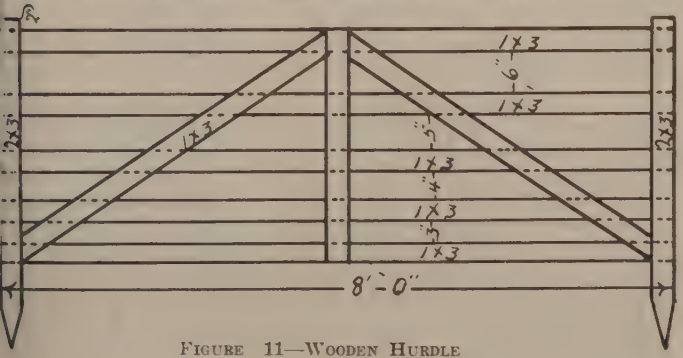
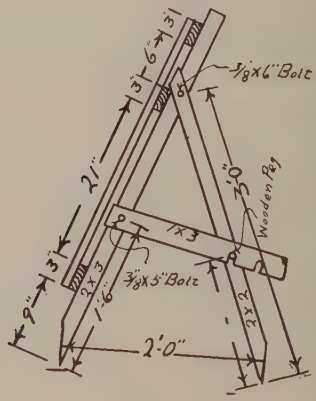


FIGURE 11—WOODEN HURDLE

HURDLES AND TEMPORARY FENCING

Figures 11, 12, and 13 show construction of hurdles of different kinds. Figure 14 shows the method of using wire and stakes for temporary fencing.

With hogs and sheep, temporary fencing and hurdling of forage such as rye, wheat, clovers, rape, and soy beans, can be used very pro By this method the animals are not allowed access to the whole field time, thus wasting considerable of the crop by trampling it down whe turned in.



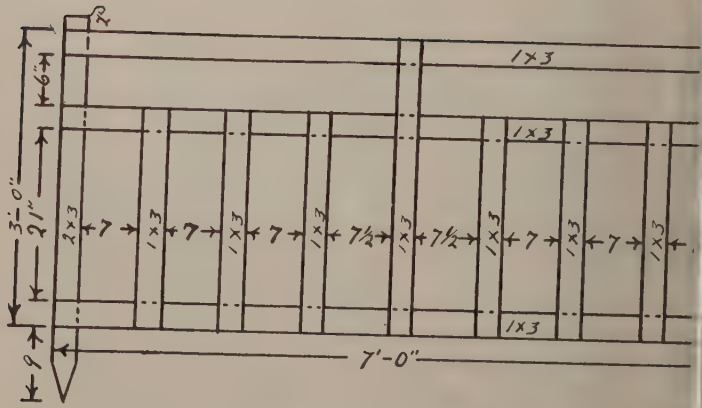
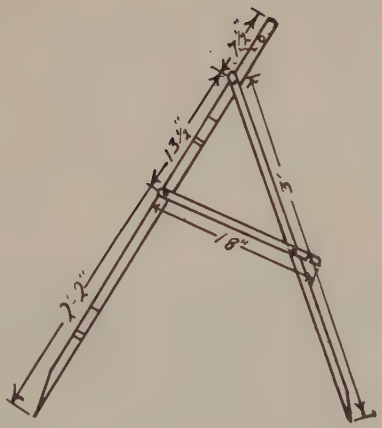


Figure 12—Iron Hurdle



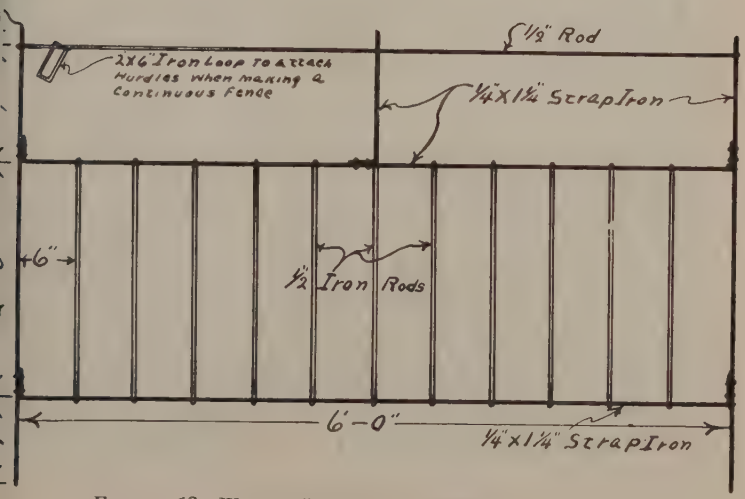


FIGURE 13—WOODEN HURDLE AND CREEP COMBINED

By the use of the temporary fence and hurdles, a small portion of crop can be given at one time, and continue on as they clean it up, allowi them just as large a lot as they will clean up every day.

With the use of the hurdle shown in Figure 13 the older stock can be c trolled and fed to suit their condition, while the lambs and pigs can have access the crop through the hurdles. In this way the mothers are kept under cont until weaning time, when the pigs can be controlled like the older animals.

Sufficient wire will be needed to reach across the field twice in order to less hurdles. This wire should be three feet high with six-inch stay wi The wire with continuous stays instead of the hinge joint will be found b for this work. Wooden stakes four feet six inches long should be driven the ground one foot. With posts one rod apart, it will be necessary put three staples in each post, to staple the wire to. Start the line of w if possible on a line with the fence posts around the field.

Figure 14—Placing the Post on the Wire. Note Lower Strand is Un Joint and Top Wire Placed in Groove

Another convenient way is to get a blacksmith to make some iron stand made out of ¾ inch round iron with a foot on them, as shown in Figure It will not be necessary to use three-foot wire in all cases, as some sheep

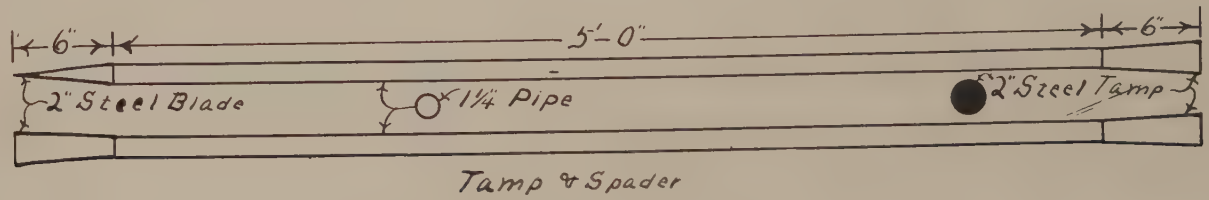


FIGURE 15—TAMP AND SPADER

hogs do not require as high a fence as others. The standards can be mad fit the wire, but in all cases make them two inches higher than the wire This is very convenient and can often be put in with the foot alone wit pressing very hard on it.

It will be necessary to have an iron bar to make a hole for the foo the wooden hurdle and stakes. Unless this is done, they will split when dr in the ground.

IRON BARS

The iron bar shown in Figure 15 can be made by a local blacksm The iron post hole bar shown in Figure 19 can be made by a local blacks by taking a piece of one-inch pipe and welding a piece of one-inch steel on each end, which must extend 12 inches up in pipe and six to eight in outside of pipe. Swell one end to make a tamper two inches wide and draw other end out, making it two inches wide and sharp, thus making a post digger bar and tamper complete in one.

TURN STILES, OPENINGS AND STEPS TO CROSS FENCES

In building a fence in places where persons have to cross, it wil necessary to have some way of crossing the fence without climbing and pu it down. There are several ways of crossing the fence, as outlined in Fig

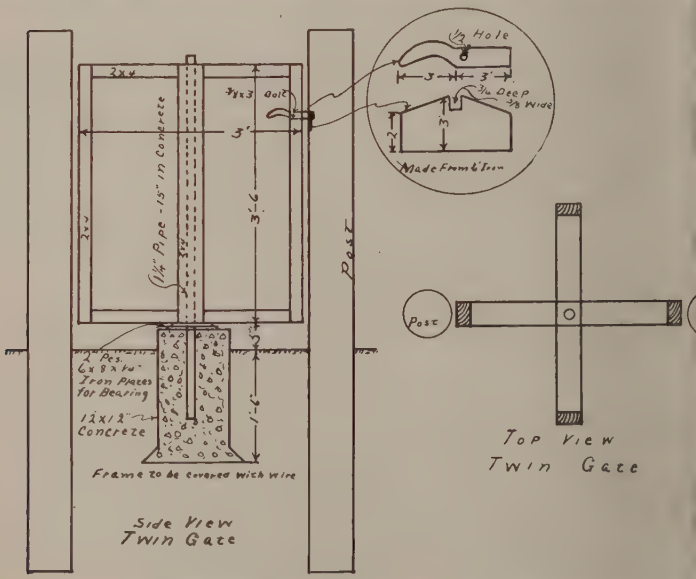


Figure 16—Showing Construction of Twin Gate on Turnstile

16, 17 and 18, which show different makes of stiles, turn stiles, and s Turn stiles shown in Figure 16 will be found very convenient where hogs, s or larger stock are kept. It will turn easily when made right. The 1½ pipe shown in center of the gate should be set in concrete 12 inches squ 2½ feet in the ground and six inches out. A six-inch plank which will a

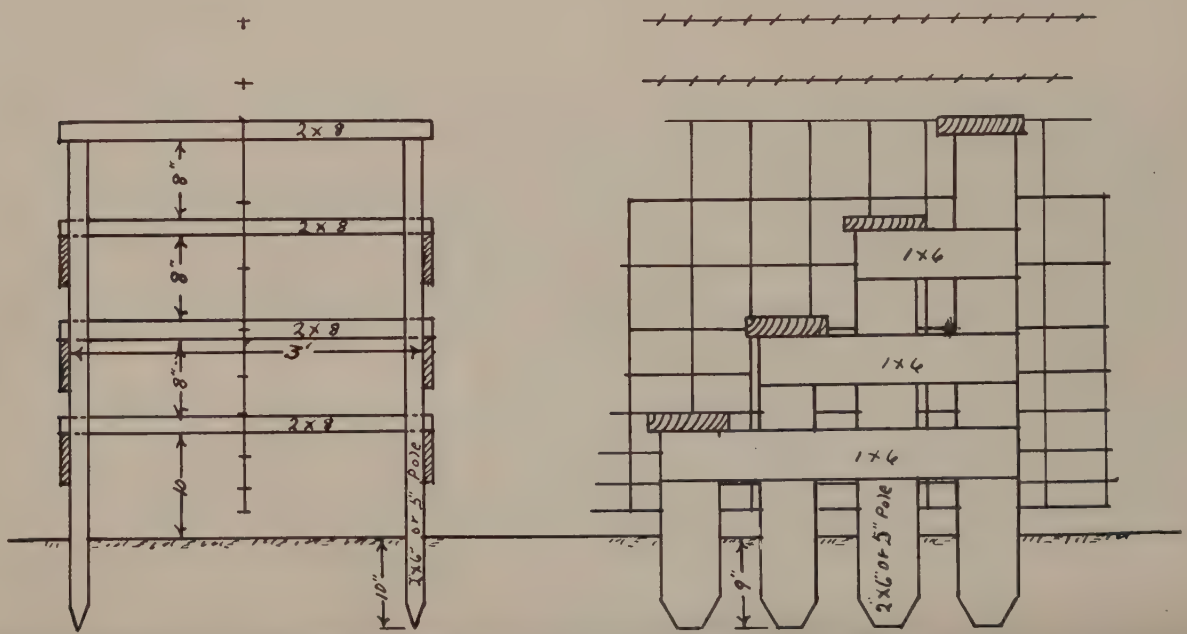


FIGURE 17—SHOWING CONSTRUCTION OF STEPS OVER WIRE FENCE

the stile to turn free should be put next to the ground to keep the animals from going under the stile. The frame should be made of 2″ x 4″, the bottom and top morticed together in the center and 2″ x 4″ upright nailed on to them (dimensions shown in Figure 16), and wire fencing nailed on center of the gate.

The bolt shown in fence post and stile can be used to fasten the stile with. A bolt on each side can be used if necessary. Figure 16 shows a stile that can be easily made and will give service a long time when put in right and the right kind of lumber used.

Figure 17 shows construction of steps which will be found very convenient and easy to make.

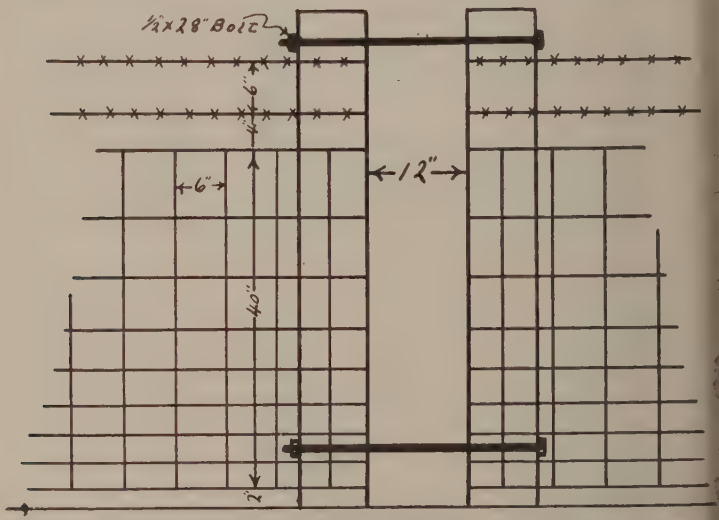


Figure 18—Showing Spread Post Method of Passageway Through Fence

Figure 18 shows posts set 12 inches apart with a one-half inch bolt long enough to go between and through the posts. The average person can go between this. It will be found very convenient where large animals are kept, but will not work very well where hogs or sheep are kept.

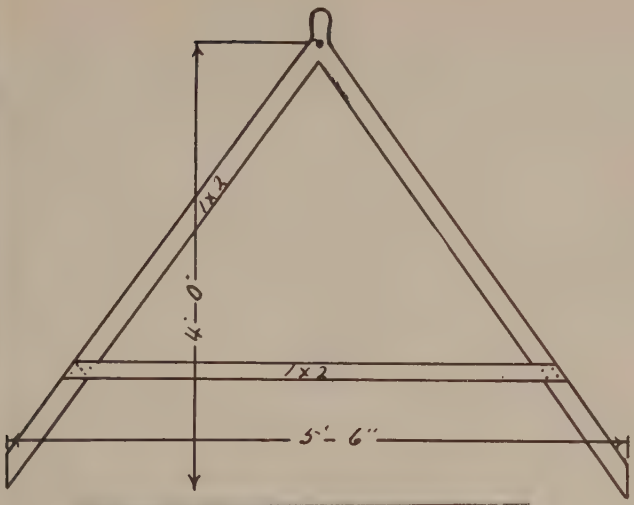
CONSTRUCTION

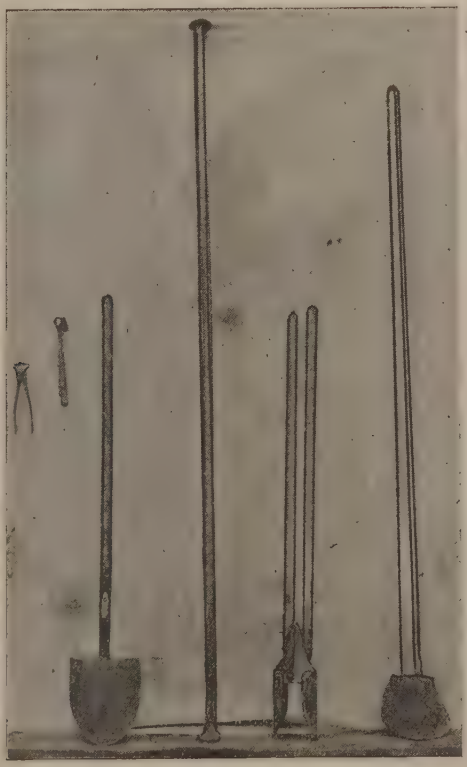
Now that the material is all on the ground, if there is any other pressing matter of more importance needing early attention, it is advisable to dispose of that first in order that the fence building project may be given undivided attention, for upon the thoroughness of this particular job depends the usefulness and lasting satisfaction of the fence.

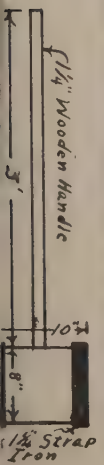
No matter how excellent the material from which it is built, a fence cannot be satisfactory unless properly constructed.

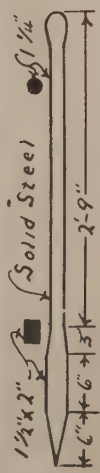
LOCATION OF ANGLES AND OPENINGS

The first step, of course, is to decide where the fence is to be built, and where and what size the openings are to be.









URE 19—MEASURING DEVICE FOR SPACING POSTS; ALSO USEFUL TOOLS FOR ERECTING FENCE

No doubt the type of gate for each opening has already been dec upon from cuts in the preceding pages. Such being the case, the exact dist between gate posts has been determined, and we are ready to proceed.

It may be stated here that it is an unsatisfactory practice to use a co post for double duty as both a corner and gate post. It is better where pos to locate the gate elsewhere.

TOOLS REQUIRED

Most of the tools needed are, with the exception of a stretcher, whic shown on another page, included in Figure 19, and consist of the follow

Hammer, hand saw, chisel, combined staple puller and wire cutter, hole digger, measuring device (drawing), spoon shovel, post hole bar (drawi crow bar, beetle (drawing), tamper, axe.

LAYING OFF

It is a good idea to first set a small stake marking the location of corner post. Next, measure ten feet in the direction to be traversed by fence. This will be the point at which the brace post will be set.

Now, with the triangular measuring device, or a 16½ foot pole, measuring up the line, marking every third lap of the device, providing are to be set one rod apart.

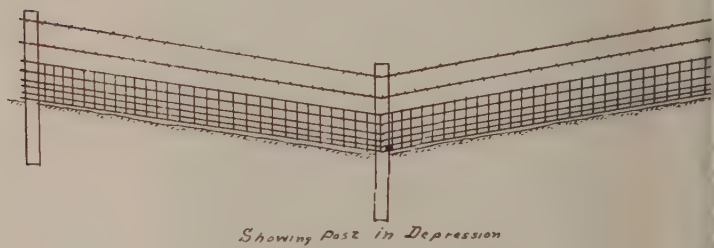


Figure 20—Post set in Depression

Attention should be given to the contour of the ground, and in every where possible, a post should be set at the highest and lowest points. Occas ally it will be found advisable where posts are set in depressions to anchor a cross piece, (Figure 20). This is done to prevent the taut fence from pu them out, and is more easily done at this time, before the wire is in the of digging the hole, than later.

Avoid Curves

Never set posts in a curved line; the wire, if properly stretched will cause such posts to lean and thus allow the wire to slacken.

It is much better to run a straight line as far as possible, setting a pos each obtuse angle, and either side stay, or double brace it as shown in Fig In case a double stay wire is made use of in locations where it will no objectionable, it should be done as soon as the fence is up and partially stret

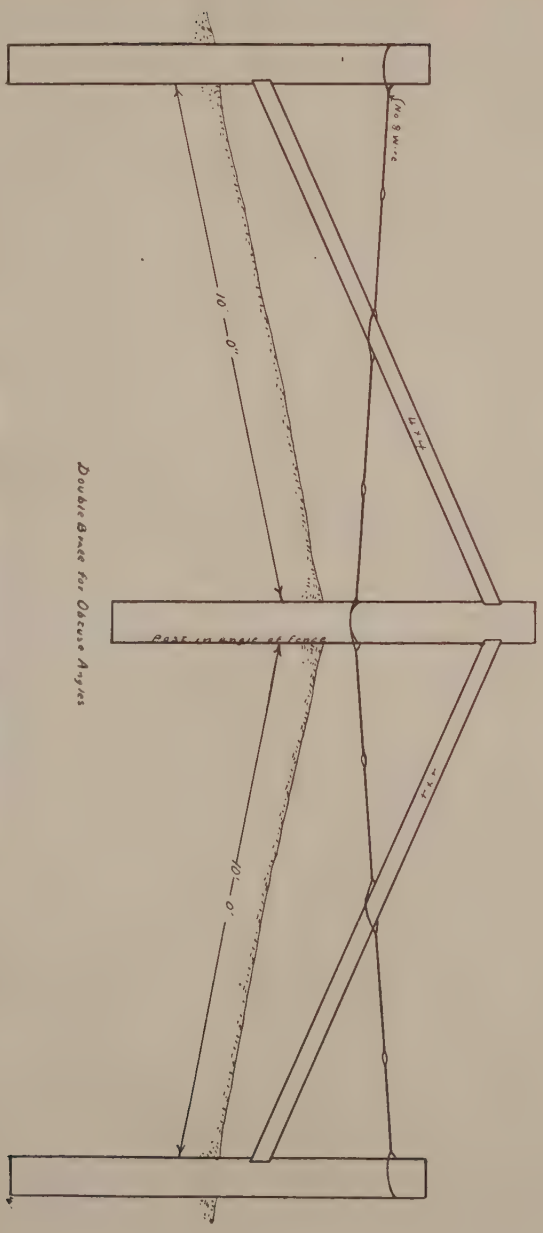


FIGURE 21.—DOUBLE BRACE FOR OBTUSE ANGLE

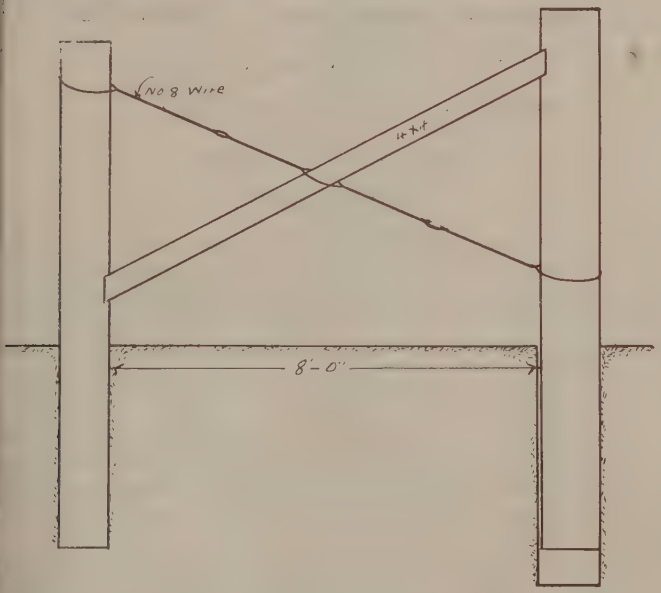
Figure 22—Showing Method of Setting Anchor and Brace Post, With Dummy Post in Position for Stretching Wire

SETTING THE POSTS

ter having decided upon their location, the next move is to set the posts. 2 shows very satisfactorily a good method of setting anchor and brace posts acing and staying them. At least four inches clearance should be allowed ilitate thorough tamping of the earth around the post.

g. 23 shows the result of setting posts too close, brace at too great an and failure to anchor the posts.

pon the manner in which this work is done, to a greater extent than on her feature, will depend the degree of satisfaction derived from the use of ice. Time and labor spent in this operation, if properly directed, will never retted.



E 23—ILLUSTRATING RESULT OF SETTING BRACE POST TOO NEAR ANCHOR POST

orner posts should be eight inches in diameter, set four feet in the ground, , with four and one half feet above the surface, makes an eight and one half post necessary.

The brace posts should be set in the ground three and one half feet, being ast six inches in diameter and eight feet in length.

The brace should, if sawed, be 4" x 4" and should be fitted in a notch about inches below the top end of the anchor post and engage the brace post in ilar manner eight to twelve inches above the surface of the ground. The is constantly subjected to a strain of varying tensity, and owing to lack ficient rigidity is frequently the location of defective construction and con- nt failure to maintain a proper tension of the wire. If round, it should be ast five inches in diameter at the small end.

The stay wire should be of eight gauge annealed wire and should engage t posts at equal distances from the top and ground as the brace on the opposite po and should be stapled in place on each post. After being twisted taut, as illu trated, it should also, be stapled to the brace where it crosses in center.

The splice, or union of the two ends of this wire, should be given attentio It should be made as illustrated, and not merely the ends twisted together in t usual manner. This can be accomplished with an ordinary splicing tool, or the absence of that, with a pair of heavy pliers and a small monkey wrench, o flat piece of iron with a hole drilled through it (Fig. 24).

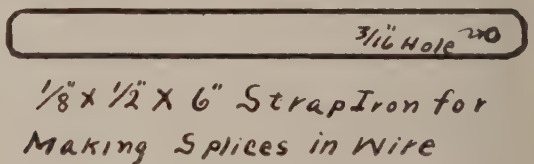


Figure 24—Iron for Splicing

DRIVING POSTS

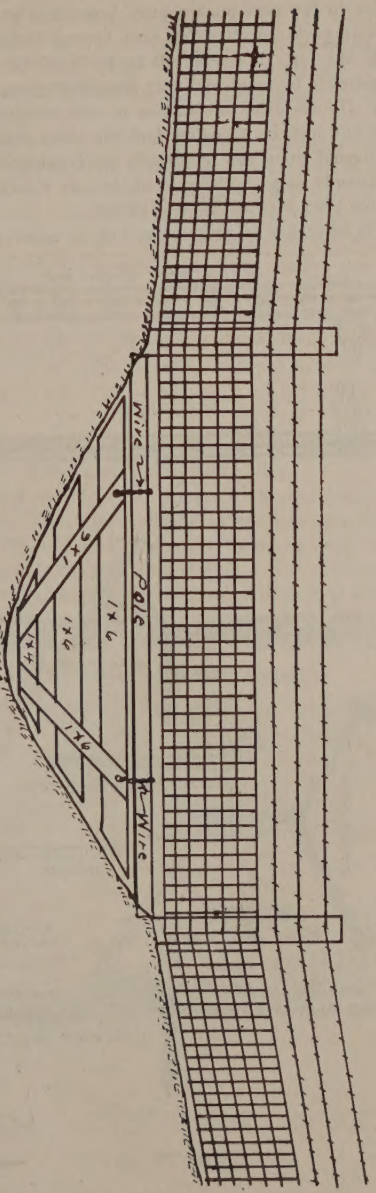
The intermediate or line posts need not be so large, and in most cases, properly sharpened (which should be done before treating) may, after a hole been made with a post-hole bar or crowbar, be driven to the desirable and sa factory depth of thirty inches. This driving is accomplished most easily dur the early Spring after the frost is out of the ground and while it is still satura with water from the winter storms. For this purpose the home-made post m (Fig. 19) is preferable to an iron sledge, owing to the greater tendency of latter to split the posts.

It seems needless to say that care taken in setting the posts erect and i straight line will be well repaid in more lasting tension and better appearan Some attention should be given to equalizing the distance between line posts wh it is necessary to vary the location to conform with the contour of the groun surface.

Where it is desired to cross an open ditch, the method of closing same agai small animals, and at the same time providing for flood conditions, as illustra in Fig. 25, is very satisfactory. The pole, unless of rot-resisting wood, should treated the same as the posts and at the same time. The flood gate may be s pended from the pole by wires loosely around the pole and through au holes in the gate. A dummy post should be set four to six feet back of the anc post, and well braced from the latter (see Fig. 22). This is to be used as an anc to which the stretcher chains are fastened for stretching the fence, and, whil will be removed when the job is complete, it is necessary that it be well set braced.

STRETCHING THE WIRE

Unroll a few rods of the wire with the close mesh side lying next to the bot of the posts where it is to go. Raise upon edge and loosely staple in an upri position for convenience, one staple over the top wire at two posts is suffici Wrap the wire around the anchor post and secure the end of each wire by wi ping it securely around itself several times.


1x6
1x6
1x6

Unroll the wire to the next anchor post, keeping it straightened out as muc as possible and continue to unroll a few feet beyond the dummy post where it stood on end, right side up. Matters will be facilitated a little by stretching th fence as tight as possible by hand and very lightly stapling in an upright positio at alternate posts. Do not drive the staples in over one-fourth inch.

The clamps should now be adjusted, and the exact point at which they shoul be attached will depend upon the length of the fencing to be stretched and th amount of slack already taken out by hand, but as a rule, back within a coupl of feet of the brace post will not be far wrong.

A double chain stretcher is preferable, but in cases where a single chain i

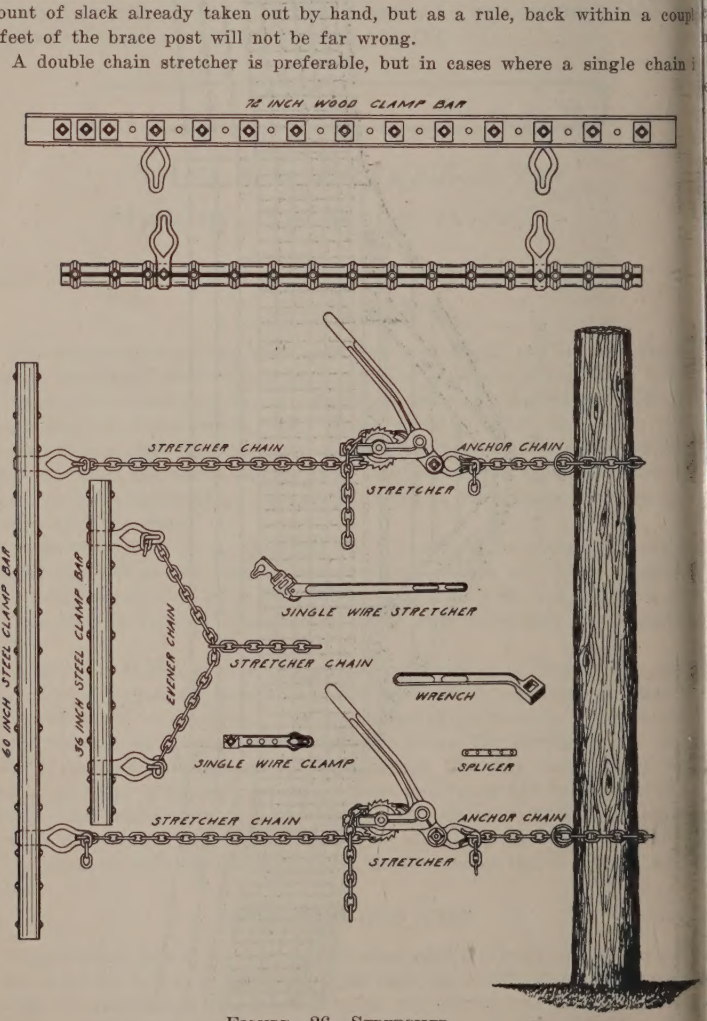


Figure 26—Stretcher

It should engage the clamp not much more than a third of the way from the post. This will depend somewhat on the type of fence to be stretched.

In adjusting the clamp to the fencing, do not at all depend upon stay wires holding it. In fact, it is much better to fasten just ahead of, rather than just behind a stay wire, as otherwise the fencing is sometimes damaged by slipping of the clamp.

When everything is adjusted properly, begin gradually stretching. Inspect the line occasionally to be sure that nothing is caught, and to remove and lightly replace staples as necessary. Continue stretching until half the tension curve is drawn out of the line wires. The wires should be fastened to this anchor post the same as to the other, by wrapping. After making sure that the clamp is pulling the proper distance above the ground, thoroughy staple, cut and wrap the line wire one at a time, beginning on the intermediate wire next to the bottom margin wire. By using heavy fencing pliers with a circular rolling motion, using the post as a fulcrum, all slack between the clamp and anchor post can be taken up as each wire is wrapped securely around itself. A good type of stretcher is shown in Fig. 26.

STAPLING

Never drive staples tight against line wires in intermediate or line posts.

Never drive a staple straddle of vertical stay wire.

It is a good plan to first staple the bottom wire, regulating the distance from the ground, and then pull the fence up taut as you complete the stapling. Only in extraordinary conditions is it necessary to staple every line wire at every post. Alternate posts and wires is a good rule.

The object in never stapling tight is to allow free lateral play of all line wires through all staples, in order that shocks and tension may be more evenly distributed throughout the fence and not confined to one panel to its detriment.

ANCHORING AND GROUNDING

There are occasional depressions over which the bottom margin wire is far enough above the ground to allow pigs to creep under, and yet it would scarcely pay to set an extra post. In such cases a hole dug to permanent moisture and an old low point (Fig. 27) with a heavy wire attached, buried in this hole, will serve the double purpose of anchoring and "**grounding**" the fence. This furnishes a safe outlet for electricity, and may be the means of saving live stock from electrocution during a storm.

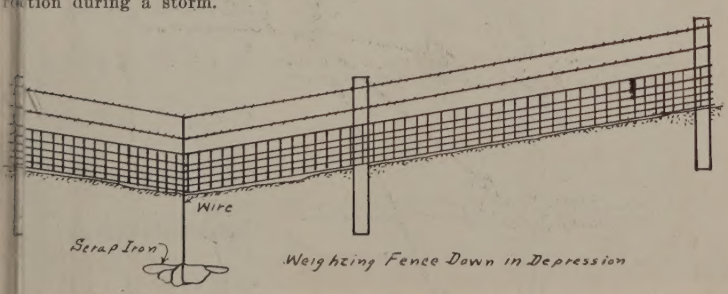
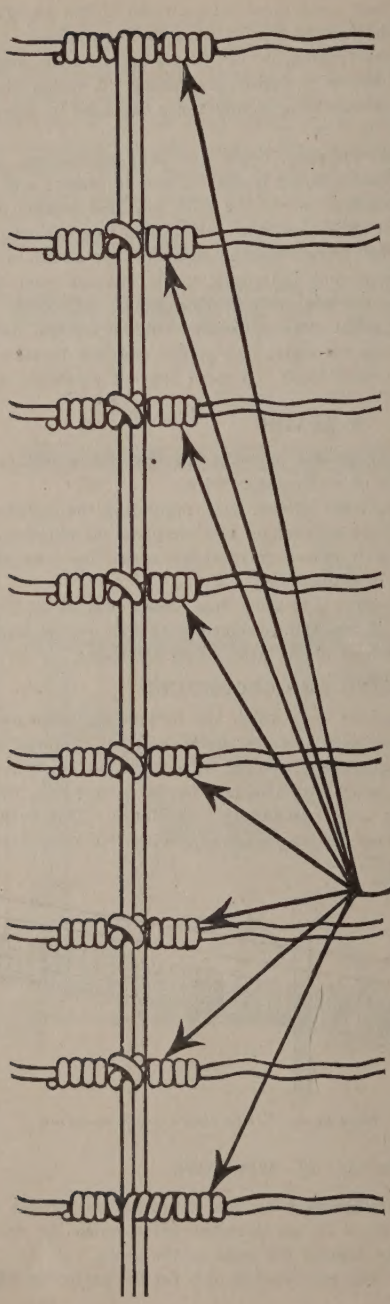


FIGURE 27—WEIGHTING

In other cases a three foot stake may be used to which the bottom wire is attached after being driven nearly as far as intended, after which the driving is completed. Such stakes should be treated the same as the posts.

Every section stretched should be grounded, if only for the protection afforded.



Splicing the Fence

In splicing one roll of fence to another the wires having been wrapped around each corresponding wire, the splices will have the neat and strong appearance as shown in the illustration.